

# USER MANUAL

DIR-301

VERSION 1.0



**D-Link**<sup>®</sup>

**WIRELESS**

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# Package Contents

- D-Link DIR-301 Wireless Router
- Power Adapter
- Ethernet Cable
- Manual and Warranty on CD

**Note:** Using a power supply with a different voltage rating than the one included with the WBR-1310 will cause damage and void the warranty for this product.



# System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0 or Netscape Navigator™ Version 6.0 and above (for configuration)

# Introduction

D-Link, the industry leader in wireless networking, introduces another breakthrough in wireless connectivity. The D-Link Wireless G DIR-301 Router which is capable of transferring data with a maximum wireless signal rate of up to 54Mbps\* in the 2.4GHz frequency — the same wireless frequency as 802.11b. The D-Link DIR-301 Wireless Router also offers four Ethernet ports to support multiple computers.

The advanced wireless technology built into the DIR-301 Wireless Router offers data transfer speeds with a maximum wireless signal rate of up to 54Mbps\* through its wireless channels allowing streaming videos and other high bandwidth applications, such as online gaming events, to operate without the hassle of Ethernet cables. The ability to use high bandwidth applications also makes streaming real-time programs more enjoyable and more efficient.

With the DIR-301 Wireless Router's built-in advanced firewall, threats of hackers penetrating your network are minimized. Some firewall features include functions that allow or disallow certain ports to be open for certain applications. Time scheduling can be established as a firewall rule so that specific ports will be open at certain times and be closed at other times. Features like content filtering, MAC filtering, URL blocking, and domain blocking are useful tools to prevent other unwanted intruders from connecting to your network or browsing restricted sites.

The easy-to-use configuration wizard takes only minutes to setup and guides users step-by-step through configuring the DIR-301. With all the versatile features and an user-friendly utility, the DIR-301 Wireless Router provides an enhanced networking experience.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

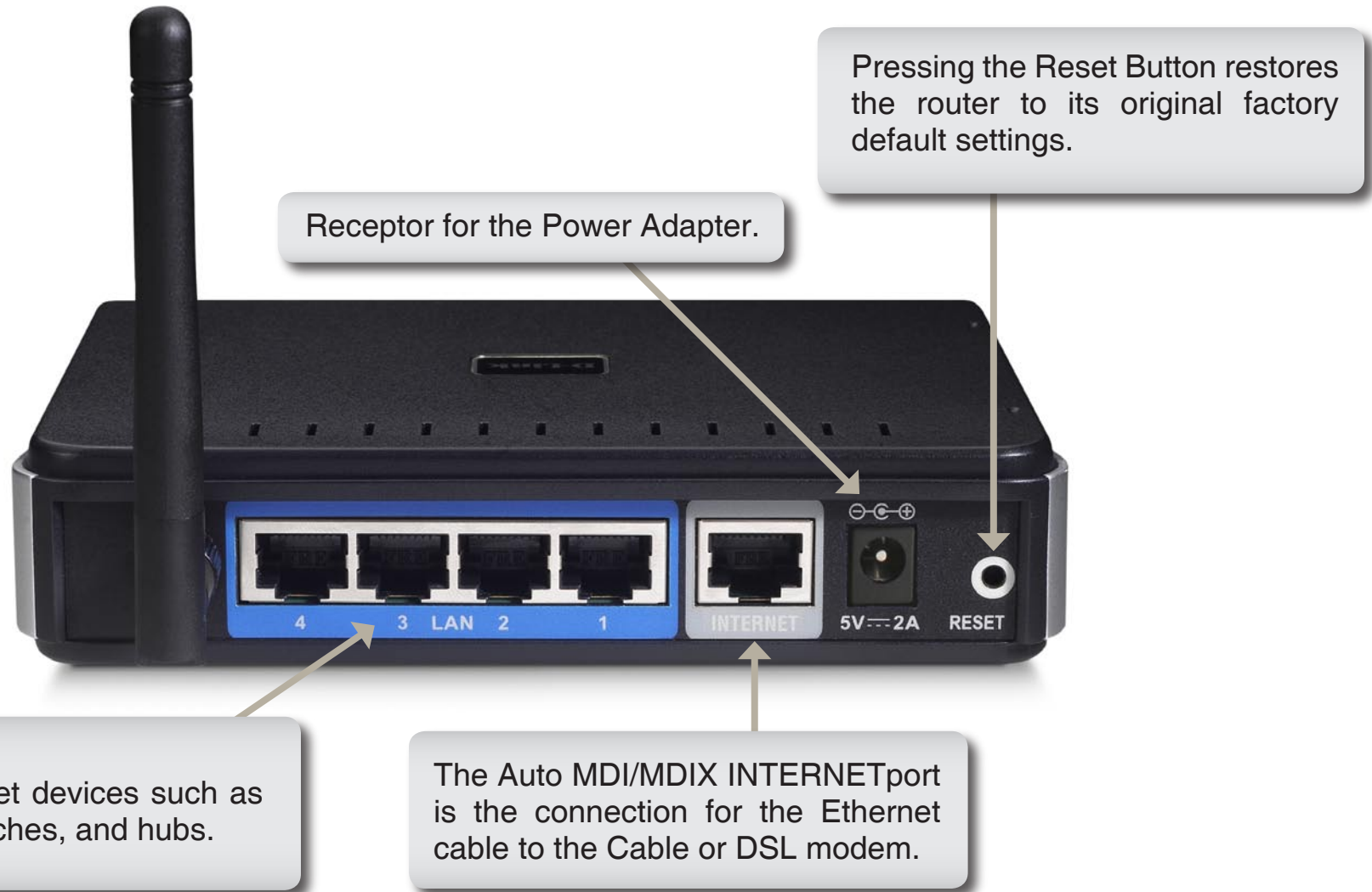
# Features

- **Faster Wireless Networking** - The DIR-301 provides up to 54Mbps\* wireless connection with other 802.11g wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11g wireless router gives you the freedom of wireless networking at speeds 5x faster than 802.11b.
- **Compatible with 802.11b and 802.11g Devices** - The DIR-301 is still fully compatible with the IEEE 802.11b standard, so it can connect with existing 802.11b PCI, USB and Cardbus adapters.
- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:
  - **Content Filtering** - Easily applied content filtering based on MAC Address, URL, and/or Domain Name.
  - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.
  - **Secure Multiple/Concurrent Sessions** - The DIR-301 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-301 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-301 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

# Hardware Overview

## Connections



# Hardware Overview

## LEDs

### INTERNET LED

A solid light indicates connection on the INTERNET port. This LED blinks during data transmission.

### WLAN LED

A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.

### Local Network LEDs

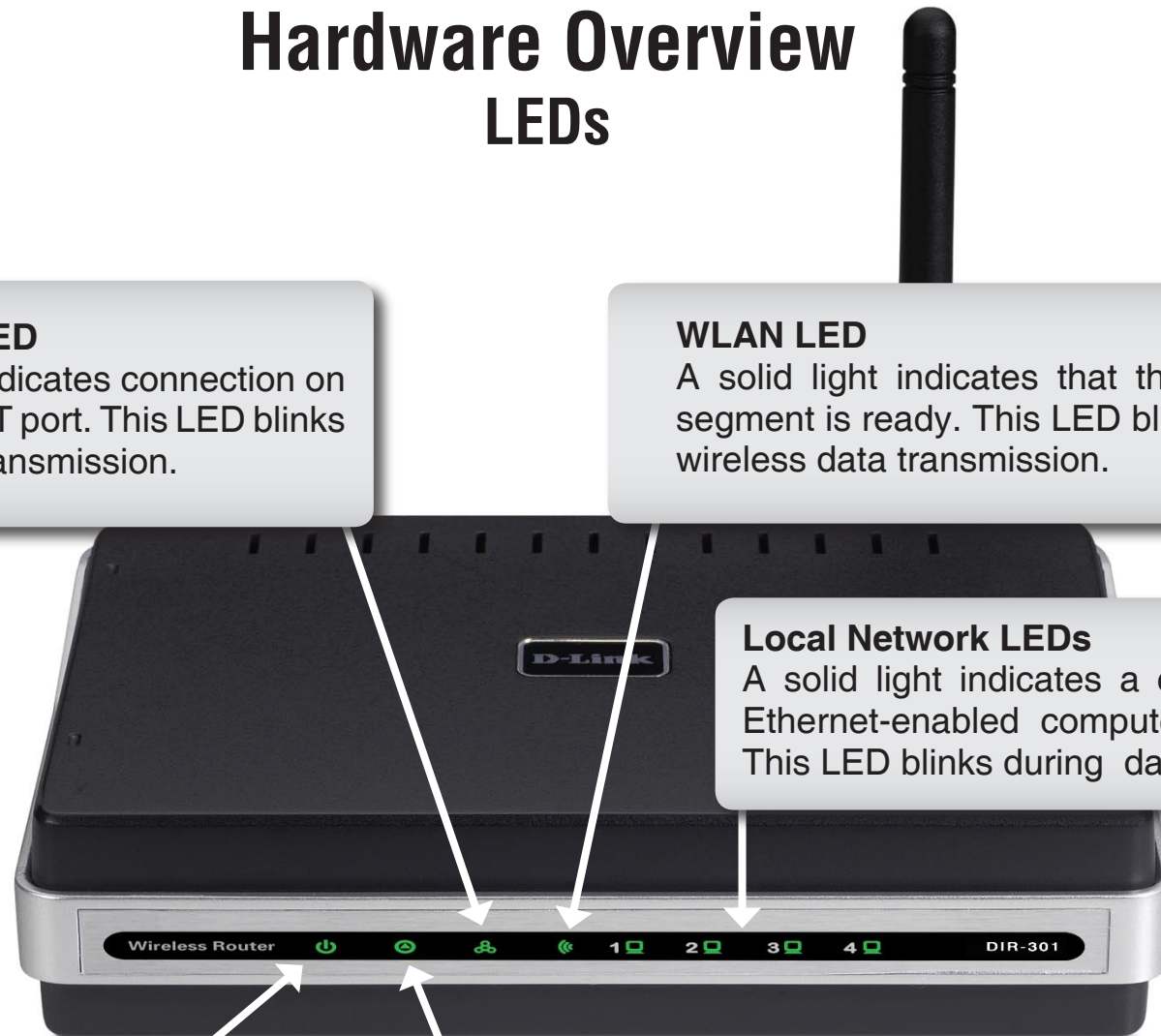
A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.

### Power LED

A solid light indicates a proper connection to the power supply.

### Status LED

A blinking light indicates that the DIR-301 is ready.





# Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

## Before you Begin

Please configure the router with the computer that was last connected directly to your modem. Also, you can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the WAN port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).

If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

# Wireless Installation Considerations

The D-Link wireless router lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

# Connect to Cable/DSL/Satellite Modem

If you are connecting the router to a cable/DSL/satellite modem, please follow the steps below:

1. Place the router in an open and central location. Do not plug the power adapter into the router.
2. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.
3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the WAN port on the router.
4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.
5. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).
6. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 30 seconds for the router to boot.
7. Turn on your computer.
8. Verify the link lights on the router. The power light, WAN light, and the LAN light (the port that your computer is plugged into) should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.
9. Skip to page 14 to configure your router.

# Connect to Another Router

If you are connecting the D-Link router to another router to use as a wireless access point and/or switch, you will have to do the following before connecting the router to your network:

- Disable UPnP™
- Disable DHCP
- Change the LAN IP address to an available address on your network. The LAN ports on the router cannot accept a DHCP address from your other router.

To connect to another router, please follow the steps below:

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.
2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **admin** and leave the password box empty. Click **OK** to continue.
3. Click on **Advanced** and then click **Advanced Network**. Uncheck the Enable UPnP checkbox. Click **Save Settings** to continue.
4. Click **Setup** and then click **Network Settings**. Uncheck the Enable DHCP Server server checkbox. Click **Save Settings** to continue.
5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.

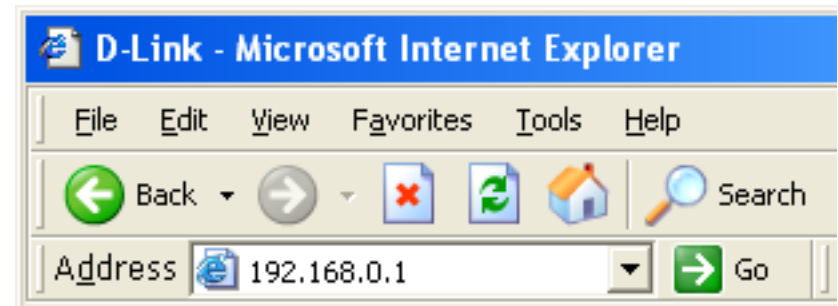
6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.
7. Connect an Ethernet cable in one of the LAN ports of the router and connect it to your other router. Do not plug anything into the WAN port of the D-Link router.
8. You may now use the other 3 LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

# Configuration

This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

## Web-based Configuration Utility

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (192.168.0.1).



Enter the user name (admin) and your password. Leave the password blank by default.

If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.



# Setup Wizard

You may run the setup wizard to quickly setup your router. Click **Setup Wizard** to launch the wizard.

The screenshot shows the D-Link DIR-301 Setup Wizard interface. The top navigation bar includes 'DIR-301', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists 'INTERNET', 'WIRELESS SETTINGS', and 'NETWORK SETTINGS'. The main content area is titled 'INTERNET CONNECTION :'. It contains the following text: 'There are 2 ways to setup your Internet connection. You can use the Web-based Internet Connection Setup Wizard or you can manually configure the connection.' Below this, there are two sections: 'INTERNET CONNECTION WIZARD :', which includes a 'Setup Wizard' button and a note about following the Quick Installation Guide; and 'MANUAL INTERNET CONNECTION OPTIONS :', which includes a 'Manual Configure' button. A 'Helpful Hints...' sidebar on the right provides additional guidance for new users and advanced users.

Click **Launch Internet Connection Setup Wizard** to begin.

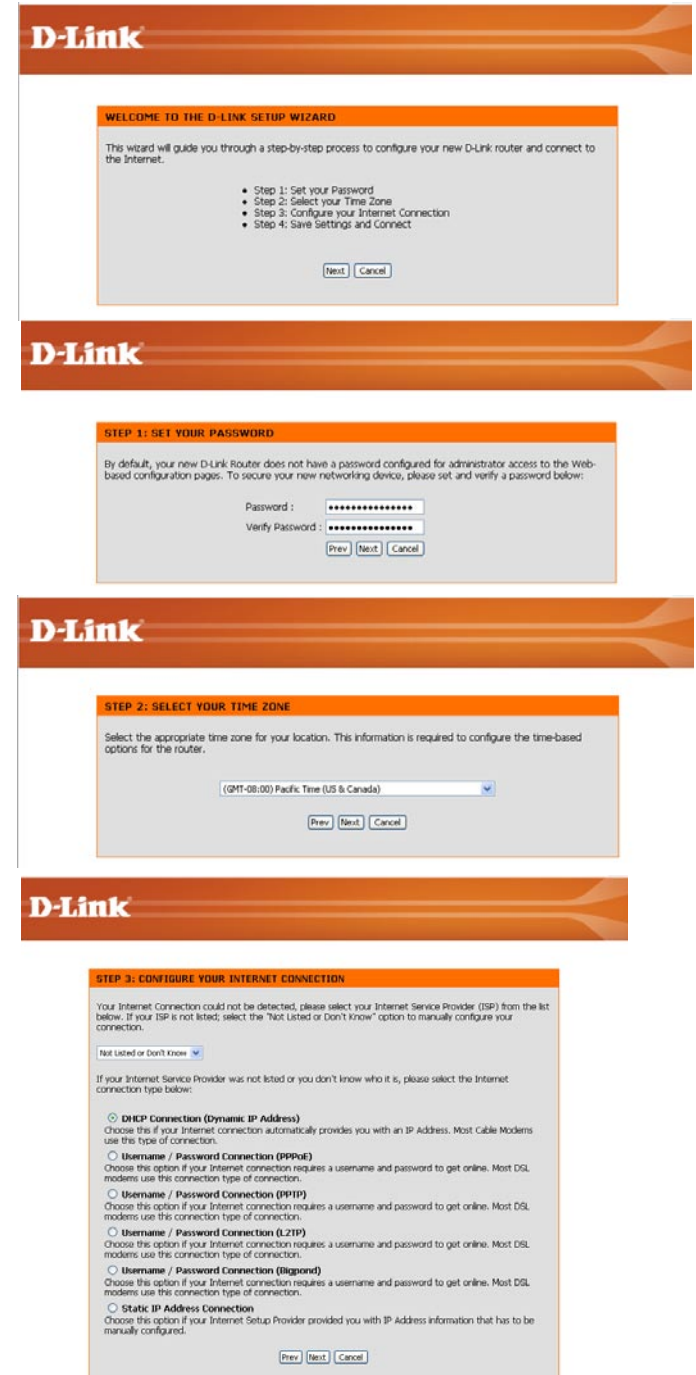
The screenshot shows the D-Link DIR-301 Setup Wizard interface, specifically the 'WIZARD' section. The top navigation bar and left sidebar are the same as in the previous screenshot. The main content area is titled 'WIZARD' and contains the text: 'The Wizards below will assist you in configuring the basic settings of your new D-Link Router..'. Below this, there are two sections: 'INTERNET CONNECTION SETUP WIZARD', which includes a 'Launch Internet Connection Setup Wizard' button and a note about following the Quick Installation Guide; and 'WIRELESS SECURITY SETUP WIZARD', which includes a 'Launch Wireless Security Setup Wizard' button and a note about changing settings on wireless client adapters. A 'Helpful Hints...' sidebar on the right provides additional guidance for users who cannot access the Internet or need assistance with wireless settings.

Click **Next** to continue.

Create a new password and then click **Next** to continue.

Select your time zone from the drop-down menu and then click **Next** to continue.

Select the type of Internet connection you use and then click **Next** to continue.





If you selected Dynamic, you may need to enter the MAC address of the computer that was last connected directly to your modem. If you are currently using that computer, click **Clone Your PC's MAC Address** and then click **Next** to continue.

The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

If you selected PPPoE, enter your PPPoE username and password. Click **Next** to continue.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

**Note:** Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

If you selected PPTP, enter your PPTP username and password. Click **Next** to continue.



**DHCP CONNECTION (DYNAMIC IP ADDRESS)**

To set up this connection, please make sure that you are connected to the D-Link Router with the PC that was originally connected to your broadband connection. If you are, then click the Clone MAC button to copy your computer's MAC Address to the D-Link Router.

MAC Address : 00 - 17 - 9a - 4d - 8c - e8 (Optional)

Host Name : DIR-301

NOTE: You may also need to provide a Host Name. If you do not have or know this information, please contact your ISP.



**SET USERNAME AND PASSWORD CONNECTION (PPPOE)**

To set up this connection you will need to have a Username and Password from your Internet Service Provider. If you do not have this information, please contact your ISP.

Address Mode :  Dynamic IP  Static IP

IP Address : 1.0.0.0

User Name : \_\_\_\_\_

Password : \_\_\_\_\_

Verify Password : \_\_\_\_\_

Service Name : \_\_\_\_\_ (Optional)

NOTE: You may also need to provide a Service Name. If you do not have or know this information, please contact your ISP.



**SET USERNAME AND PASSWORD CONNECTION (PPTP)**

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need PPTP IP address. If you do not have this information, please contact your ISP.

Address Mode :  Dynamic IP  Static IP

PPTP IP Address : 1.0.0.0

PPTP Subnet Mask : 1.0.0.0

PPTP Gateway IP Address : 1.0.0.0

PPTP Server IP Address (may be same as gateway) : \_\_\_\_\_

User Name : \_\_\_\_\_

Password : \_\_\_\_\_

Verify Password : \_\_\_\_\_

If you selected L2TP, enter your L2TP username and password. Click **Next** to continue.

**D-Link**

**SET USERNAME AND PASSWORD CONNECTION (L2TP)**

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need L2TP IP address. If you do not have this information, please contact your ISP.

Address Mode:  Dynamic IP  Static IP

L2TP IP Address: 0.0.0.0

L2TP Subnet Mask: 0.0.0.0

L2TP Gateway IP Address: 0.0.0.0

L2TP Server IP Address (may be same as gateway):

User Name:

Password: \*\*\*\*\*

Verify Password: \*\*\*\*\*

Prev Next Cancel

If you selected Static, enter your network settings supplied by your Internet provider. Click **Next** to continue.

**D-Link**

**SET USERNAME AND PASSWORD CONNECTION (BIGPOND)**

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need BigPond IP address. If you do not have this information, please contact your ISP.

Auth Server: isp-server

Bigpond Server IP Address (may be same as gateway):

Bigpond User Name:

Bigpond Password: \*\*\*\*\*

Bigpond Verify Password: \*\*\*\*\*

Prev Next Cancel

Click **Connect** to save your settings. Once the router is finished rebooting, click **Continue**. Please allow 1-2 minutes to connect.

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**SET STATIC IP ADDRESS CONNECTION**

To set up this connection you will need to have a complete lot of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP.

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Gateway Address: 0.0.0.0

Primary DNS Address: 0.0.0.0

Secondary DNS Address: 0.0.0.0

Prev Next Cancel

Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.

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**SETUP COMPLETE!**

The Setup Wizard has completed. Click the Connect button to save your settings and reboot the router.

Prev Connect Cancel

# Internet Setup

## Dynamic (Cable)

**Dynamic IP Address:** Choose Dynamic IP Address to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for Cable modem services.

**Host Name:** The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

**MAC Address:** The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

**Clone MAC Address:** The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

**Primary DNS Addresses:** Enter the Primary DNS (Domain Name Server) server IP address assigned by your ISP.

**Secondary DNS Address:** This is optional.

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'D-Link', 'DIR-301', and tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is active, and the 'INTERNET' section is selected in the left sidebar. The main content area is titled 'INTERNET CONNECTION' and contains the following information:

- INTERNET CONNECTION:** Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.
- Note:** If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.
- Buttons: 'Save Settings' and 'Don't Save Settings'.
- INTERNET CONNECTION TYPE:** Choose the mode to be used by the router to connect to the Internet. My Internet Connection is:  (dropdown menu).
- DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE:** Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password.
- Fields:
  - Host Name:
  - MAC Address:  -  -  -  -  -  (optional). A 'Clone MAC Address' button is located below this field.
  - Primary DNS Address:
  - Secondary DNS Address:  (optional)
  - MTU:

On the right side of the interface, there is a 'Helpful Hints...' section with the following text:

**Internet Connection:** When configuring the router to access the Internet, be sure to choose the correct **Internet Connection Type** from the drop down menu. If you are unsure of which option to choose, please contact your **Internet Service Provider (ISP)**.

**Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.

# Internet Setup

## PPPoE (DSL)

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

**PPPoE:** Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

**User Name:** Enter your PPPoE user name.

**Password:** Enter your PPPoE password and then retype the password in the next box.

**Service Name:** Enter the ISP Service Name (optional).

**IP Address:** Enter the IP address (Static PPPoE only).

**DNS Addresses:** Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).

**Maximum Idle Time:** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

**Connection Mode Select:** Select either Always-on, Manual, or Connect-on demand.

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DIR-301 //

SETUP    ADVANCED    TOOLS    STATUS    SUPPORT

INTERNET  
WIRELESS SETTINGS  
NETWORK SETTINGS

**INTERNET CONNECTION**

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

**Note:** If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

Save Settings    Don't Save Settings

**Helpful Hints..**

**Internet Connection:** When configuring the router to access the Internet, be sure to choose the correct **Internet Connection Type** from the drop down menu. If you are unsure of which option to choose, please contact your **Internet Service Provider (ISP)**.

**Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.

**INTERNET CONNECTION TYPE :**

Choose the mode to be used by the router to connect to the Internet.

My Internet Connection is :

**PPPoE :**

Enter the information provided by your Internet Service Provider (ISP).

Dynamic PPPoE     Static PPPoE

User Name :

Password :

Retype Password :

Service Name :  (optional)

IP Address :

MAC Address :  (optional)

Primary DNS Address :

Secondary DNS Address :  (optional)

Maximum Idle Time :  Minutes

MTU :

Connect mode select :  Always-on     Manual     Connect-on demand

# Internet Setup

## PPTP

Choose PPTP (Point-to-Point-Tunneling Protocol ) if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

**PPTP:** Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

**IP Address:** Enter the IP address (Static PPTP only).

**Subnet Mask:** Enter the Primary and Secondary DNS Server Addresses (Static PPTP only).

**Gateway:** Enter the Gateway IP Address provided by your ISP.

**DNS:** The DNS server information will be supplied by your ISP (Internet Service Provider.)

**Server IP:** Enter the Server IP provided by your ISP (optional).

**PPTP Account:** Enter your PPTP account name.

**PPTP Password:** Enter your PPTP password and then retype the password in the next box.

**Maximum Idle Time:** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

**MTU:**

Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

**Connect Mode:**

Select either Always-on, Manual, or Connect-on demand.

**D-Link**

DIR-301

SETUP   ADVANCED   TOOLS   STATUS   SUPPORT

INTERNET  
WIRELESS SETTINGS  
NETWORK SETTINGS

**INTERNET CONNECTION**

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

**Note:** If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

Save Settings   Don't Save Settings

**Helpful Hints..**

**Internet Connection:** When configuring the router to access the Internet, be sure to choose the correct **Internet Connection Type** from the drop down menu. If you are unsure of which option to choose, please contact your **Internet Service Provider (ISP)**.

**Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.

**INTERNET CONNECTION TYPE :**

Choose the mode to be used by the router to connect to the Internet.

My Internet Connection is : PPTP (Username / Password)

**PPTP :**

Enter the information provided by your Internet Service Provider (ISP).

Dynamic IP    Static IP

IP Address : 0.0.0.0

Subnet Mask : 0.0.0.0

Gateway : 0.0.0.0

DNS : 0.0.0.0

Server IP/Name : \_\_\_\_\_

PPTP Account : \_\_\_\_\_

PPTP Password : ●●●●●●●●●●●●●●●●

PPTP Retype password : ●●●●●●●●●●●●●●●●

Maximum Idle Time : 5 Minutes

MTU : 1400

Connect mode select :  Always-on    Manual    Connect-on demand

# Internet Setup

## L2TP

Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses a L2TP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

**L2TP:** Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

**IP Address:** Enter the IP address (Static L2TP only).

**Subnet Mask:** Enter the Primary and Secondary DNS Server Addresses (Static L2TP only).

**Gateway:** Enter the Gateway IP Address provided by your ISP.

**DNS:** The DNS server information will be supplied by your ISP (Internet Service Provider.)

**Server IP:** Enter the Server IP provided by your ISP (optional).

**L2TP Account:** Enter your L2TP account name.

**L2TP Password:** Enter your L2TP password and then retype the password in the next box.

**Maximum Idle Time:** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

**MTU:**

Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

**Connect Mode:**

Select either Always-on, Manual, or Connect-on demand.

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**INTERNET CONNECTION**

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

**Note:** If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

Save Settings Don't Save Settings

**Helpful Hints..**

**Internet Connection:** When configuring the router to access the Internet, be sure to choose the correct **Internet Connection Type** from the drop down menu. If you are unsure of which option to choose, please contact your **Internet Service Provider (ISP)**.

**Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.

**INTERNET CONNECTION TYPE :**

Choose the mode to be used by the router to connect to the Internet.

My Internet Connection is : L2TP (Username / Password)

**L2TP :**

Enter the information provided by your Internet Service Provider (ISP).

Dynamic IP  Static IP

IP Address : 0.0.0.0

Subnet Mask : 0.0.0.0

Gateway : 0.0.0.0

DNS : 0.0.0.0

Server IP/Name : \_\_\_\_\_

L2TP Account : \_\_\_\_\_

L2TP Password : ●●●●●●●●●●●●●●●●

L2TP Retype password : ●●●●●●●●●●●●●●●●

Maximum Idle Time : 5 Minutes

MTU : 1400

Connect mode select :  Always-on  Manual  Connect-on demand



# Internet Setup

## Big Pond

**User Name:** Enter your Big Pond user name.

**Password:** Enter your Big Pond password and then retype the password in the next box.

**Auth Server:** Enter the IP address of the login server.

**Login Server IP:** Enter the IP address of the login server.

**MAC Address:** The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

**Clone MAC Address:** The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is active, and the 'INTERNET' sub-tab is selected. The main content area is titled 'INTERNET CONNECTION' and contains the following text:

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.

**Note:** If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

Buttons for 'Save Settings' and 'Don't Save Settings' are visible.

Below this, the 'INTERNET CONNECTION TYPE' section is shown, with a dropdown menu set to 'BigPond (Australia)'. The 'BIGPOND' section contains the following fields:

- User Name:
- Password:
- Retype Password:
- Auth Server: sm-server (dropdown)
- Login Server IP/Name:  (optional)
- MAC Address: 00 - 17 - 9a - 4d - 8c - e6 (optional)

A 'Clone MAC Address' button is located below the MAC Address field.

On the right side of the interface, there are two support sections:

- Helpful Hints..**: Internet Connection: When configuring the router to access the Internet, be sure to choose the correct Internet Connection Type from the drop down menu. If you are unsure of which option to choose, please contact your Internet Service Provider (ISP).
- Support:** If you are having trouble accessing the Internet through the router, double check any settings you have entered on this page and verify them with your ISP if needed.

# Internet Setup

## Static (assigned by ISP)

Select Static IP Address if all WAN IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

**IP Address:** Enter the IP address assigned by your ISP.

**Subnet Mask:** Enter the Subnet Mask assigned by your ISP.

**ISP Gateway:** Enter the Gateway assigned by your ISP.

**MAC Address:** The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

**Clone MAC Address:** The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the **Clone MAC Address** button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

**Primary DNS Address:** Enter the Primary DNS server IP address assigned by your ISP.

**Secondary DNS Address:** This is optional.

**MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'INTERNET' tab is selected, showing the 'INTERNET CONNECTION' section. The page is titled 'INTERNET CONNECTION' and contains the following text: 'Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and BigPond. If you are unsure of your connection method, please contact your Internet Service Provider.' Below this is a 'Note' about PPPoE and two buttons: 'Save Settings' and 'Don't Save Settings'. The 'INTERNET CONNECTION TYPE' section shows a dropdown menu set to 'Static IP'. The 'STATIC IP ADDRESS INTERNET CONNECTION TYPE' section contains fields for IP Address (0.0.0.0), Subnet Mask (0.0.0.0), ISP Gateway Address (0.0.0.0), MAC Address (00-17-9a-4d-8c-e6), Primary DNS Address (0.0.0.0), Secondary DNS Address (0.0.0.0), and MTU (1500). A 'Clone MAC Address' button is located below the MAC Address field. On the right side, there are 'Helpful Hints..' and 'Support:' sections with additional instructions.



# Wireless Settings

**Enable Wireless:** Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions.

**Wireless Network Name:** Service Set Identifier (SSID) is the name of your wireless network. Create a name using up to 32 characters. The SSID is case-sensitive.

**Wireless Channel:** Indicates the channel setting for the WBR-2310. By default the channel is set to 6. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. The **Auto Channel Scan** setting can be selected to allow the WBR-2310 to choose the channel with the least amount of interference.

**802.11g Only Mode:** Enable this mode if your network is made up of purely 802.11g devices. If you have both 802.11b and 802.11g wireless clients, uncheck the box.

**Enable Hidden Wireless:** Check this option if you would not like the SSID of your wireless network to be broadcasted by the WBR-2310. If this option is checked, the SSID of the WBR-2310 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your WBR-2310 in order to connect to it.

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SETUP    ADVANCED    TOOLS    STATUS    SUPPORT

INTERNET

WIRELESS SETTINGS

NETWORK SETTINGS

**WIRELESS NETWORK :**

Use this section to configure the wireless settings for your D-Link Router. Please note that changes made on this section may also need to be duplicated on your Wireless Client.

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP or WPA-Personal.

Save Settings    Don't Save Settings

**WIRELESS NETWORK SETTINGS :**

Enable Wireless :

Wireless Network Name :  (Also called the SSID)

Wireless Channel :

Enable Auto Channel Scan :

802.11g Only Mode :

Enable Hidden Wireless :  (Also called the SSID Broadcast)

**WIRELESS SECURITY MODE :**

Security Mode :

**Helpful Hints..**

**Wireless Network Name:**  
Changing your Wireless Network Name is the first step in securing your wireless network. We recommend that you change it to a familiar name that does not contain any personal information.

**Auto Channel:**  
If you are not utilizing Super G with Dynamic Turbo for its speed improvements, we recommend that you Enable Auto Channel Scan so that the router can select the best possible channel for your wireless network to operate on.

**Hidden Wireless:**  
Enabling Hidden Mode is another way to secure your network. With this option enabled, no wireless clients will be able to see your wireless network when they perform scan to see what's available. In order for your wireless devices to connect to your router, you will need to manually enter the Wireless Network Name on each device.

# Network Settings

This section will allow you to change the local network settings of the router and to configure the DHCP settings.

**IP Address:** Enter the IP address of the router. The default IP address is 192.168.0.1.

If you change the IP address, once you click Apply, you will need to enter the new IP address in your browser to get back into the configuration utility.

**Subnet Mask:** Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

**Local Domain:** Enter the Domain name (Optional).

**Enable DNS Relay:** Check the box to transfer the DNS server information from your ISP to your computers. If unchecked, your computers will use the router for a DNS server.

Refer to the next page for DHCP information.

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SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET  
WIRELESS SETTINGS  
NETWORK SETTINGS

**NETWORK SETTINGS :**

Use this section to configure the internal network settings of your router and also to configure the built-in DHCP Server to assign IP addresses to the computers on your network. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.

Save Settings Don't Save Settings

**ROUTER SETTINGS :**

Use this section to configure the internal network settings of your router. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.

Router IP Address : 192.168.0.1  
Default Subnet Mask : 255.255.255.0  
Local Domain Name :  
Enable DNS Relay :

**DHCP SERVER SETTINGS :**

Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.

Enable DHCP Server :   
DHCP IP Address Range : 100 to 199 (addresses within the LAN subnet)  
DHCP Lease Time : 180 (minutes)

**DYNAMIC DHCP CLIENT LIST :**

Host Name	IP Address	MAC Address	Expired Time
-----------	------------	-------------	--------------

**Helpful Hints..**

**DHCP Server:**  
If you already have a DHCP server on your network or are using static IP addresses on all the devices on your network, uncheck **Enable DHCP Server** to disable this feature.

**DHCP Reservation:**  
In order to ensure that devices on your network are always assigned the same IP address, add a **DHCP Reservation** for each device.

# DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-301 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to “Obtain an IP Address Automatically.” When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DIR-301. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

**Enable DHCP Server:** Check the box to enable the DHCP server on your router. Uncheck to disable this function.

**DHCP IP Address Range:** Enter the starting and ending IP addresses for the DHCP server’s IP assignment.

**Lease Time:** The length of time for the IP address lease. Enter the Lease time in minutes.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists 'INTERNET', 'WIRELESS SETTINGS', and 'NETWORK SETTINGS'. The main content area is titled 'NETWORK SETTINGS' and contains three sections: 'ROUTER SETTINGS', 'DHCP SERVER SETTINGS', and 'DYNAMIC DHCP CLIENT LIST'. The 'DHCP SERVER SETTINGS' section is currently active and shows the following configuration: 'Enable DHCP Server' is checked, 'DHCP IP Address Range' is set to 100 to 199, and 'DHCP Lease Time' is set to 180 minutes. The 'DYNAMIC DHCP CLIENT LIST' section is currently empty.

Host Name	IP Address	MAC Address	Expired Time

**Helpful Hints..**  
**DHCP Server:** If you already have a DHCP server on your network or are using static IP addresses on all the devices on your network, uncheck **Enable DHCP Server** to disable this feature.  
**DHCP Reservation:** In order to ensure that devices on your network are always assigned the same IP address, add a **DHCP Reservation** for each device.

# Port Forwarding Rules

This will allow you to open a single port or a range of ports.

**Rule:** Check the box to enabled the rule.

**Name:** Enter a name for the rule.

**IP Address:** Enter the IP address of the computer on your local network that you want to allow the incoming service to.

**Start Port/** Enter the port or ports that you want to open.

**End Port:** If you want to open 1 port, enter the same port in both boxes.

**Traffic Type:** Select **TCP**, **UDP**, or **ANY**.

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SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING

APPLICATION RULES

NETWORK FILTER

WEBSITE FILTER

FIREWALL SETTINGS

ADVANCED WIRELESS

ADVANCED NETWORK

**PORT FORWARDING RULES :**

The Port Forwarding option is used to open a single port or a range of ports through your firewall and redirect data through those ports to a single PC on your network.

Save Settings Don't Save Settings

**10- PORT FORWARDING RULES**

	Name	Application Name	IP Address	Computer Name	Start	End	Traffic Type
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any
<input type="checkbox"/>		<< Application Name	0.0.0.0	<< Computer Name	0	0	Any

**Helpful Hints..**

**Application Names:** Check the **Application Name** drop down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop down menu to fill out the appropriate fields.

**Computer Names:** You can select your computer from the list of DHCP clients in the **Computer Name** drop down menu, or enter the IP address manually of the computer you would like to open the specified port to.

**Port Ranges:** This feature allows you to open a range of ports to a computer on your network. To do so, enter the first port in the range you would like to open in the **Start** field and last port of the range in the **End** field.

**Single Ports:** To open a single port using this feature, simply enter the same number in both the **Start** and **End** fields.

# Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-301.

**Rule:** Check the box to enabled the rule.

**Name:** Enter a name for the rule.

**Trigger Port:** This is the port used to trigger the application. It can be either a single port or a range of ports.

**Firewall Port:** This is the port number on the WAN side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.

**Traffic Type:** Select **TCP**, **UDP**, or **ANY**.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options: 'PORT FORWARDING', 'APPLICATION RULES', 'NETWORK FILTER', 'WEBSITE FILTER', 'FIREWALL SETTINGS', 'ADVANCED WIRELESS', and 'ADVANCED NETWORK'. The main content area is titled 'APPLICATION RULES' and contains a description: 'The Application Rules option is used to open single or multiple ports in your firewall when the router senses data sent to the Internet on a outgoing "Trigger" port or port range. Special Applications rules apply to all computers on your internal network.' Below this are 'Save Settings' and 'Don't Save Settings' buttons. A table titled '10 - APPLICATION RULES' is shown with columns for 'Port' and 'Traffic Type'. The table has four rows, each with a checkbox, an input field, a dropdown menu labeled 'Application Name', and two sub-rows for 'Trigger' and 'Firewall' ports, each with a 'Traffic Type' dropdown menu set to 'TCP'. A sidebar on the right contains 'Helpful Hints..' and instructions: 'Application Names: Check the Application Name drop down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop down menu to fill out the appropriate fields.'

# Network Filter

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

**Configure MAC Filter:** Select Disable MAC filters, allow MAC addresses listed below, or deny MAC addresses listed below.

**Schedule:** The schedule of time when the network filter will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools > Schedules** section.

**MAC Address:** Enter the MAC address you would like to filter.  
To find the MAC address on a computer, please refer to the Networking Basics section in this manual.

**DHCP Client:** Select a DHCP client from the drop-down menu and click the arrow to copy that MAC Address.

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**MAC FILTERING :**

The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/Internet access.

Save Settings Don't Save Settings

**10 - MAC FILTERING RULES**

Configure MAC Filtering below:

Turn MAC Filtering OFF

MAC Address		DHCP Client List	
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR
00-00-00-00-00-00	<<	Computer Name	CLEAR

**Helpful Hints..**

**Mac Filtering:** Create a list of MAC addresses that you would either like to allow or deny access to your network.

**Computer Names:** computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu and click the arrow to add that device's MAC to the list.

**Clearing an Entry:** Click the CLEAR button to remove the MAC address from the MAC Filtering list.

# Website Filter

URL and domain blocking are used to deny LAN computers from accessing specific web sites by the URL or domain. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display. To use this feature, enter the text string to be blocked and click **Apply**. The text to be blocked will appear in the list. To delete the text, just highlight it and click **Delete**.

**Configure Website Filter:** Select Turn Website Filtering OFF, Turn Website Filtering ON and ALLOW computers access to ONLY these sites, or Turn Website Filtering ON and DENY computers access to ONLY these sites.

**Website URL/ Domain:** Enter the keywords or URLs that you want to block (or allow). Any URL with the keyword in it will be blocked.

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SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING  
APPLICATION RULES  
NETWORK FILTER  
WEBSITE FILTER  
FIREWALL SETTINGS  
ADVANCED WIRELESS  
ADVANCED NETWORK

**WEBSITE FILTERING RULES :**

The Website Filter option allows you to set-up a list of Websites that the users on your network will either be allowed or denied access to.

Save Settings Don't Save Settings

**20 - WEBSITE FILTERING RULES**

Configure Website Filtering below:

Turn Website Filtering OFF

Clear the list below...

Website URL/Domain	Website URL/Domain
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

**Helpful Hints..**

**Website Filtering:**  
Create a list of Websites that you would like the devices on your network to be allowed or denied access to.

**Keywords:**  
Keywords can be entered in this list in order to block any URL containing the keyword entered.

# Firewall Settings

This section will allow you to setup a DMZ host and to enable VPN passthrough.

If you have a client PC that cannot run Internet applications properly from behind the DIR-301, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

**Enable DMZ Host:** Check this box to enable DMZ.

**DMZ IP Address:** Enter the IP address of the computer you would like to open all ports to.

**Enable PPTP Passthrough:** Check this box to allow PPTP VPN traffic to pass through the router to your VPN client.

**Enable L2TP Passthrough:** Check this box to allow L2TP VPN traffic to pass through the router to your VPN client.

**Enable IPSec Passthrough:** Check this box to allow IPSec VPN traffic to pass through the router to your VPN client.

**D-Link**

DIR-301 // SETUP ADVANCED TOOLS STATUS SUPPORT

PORT FORWARDING  
APPLICATION RULES  
NETWORK FILTER  
WEBSITE FILTER  
FIREWALL SETTINGS  
ADVANCED WIRELESS  
ADVANCED NETWORK

**FIREWALL SETTINGS :**

The Web Filter options allows you to set-up a list of allowed Web sites that can be used by multiple users. When Web Filter is enabled, all other Web sites not listed on this page will be blocked.

Save Settings Don't Save Settings

**DMZ HOST :**

The DMZ (Demilitarized Zone) option provides you with an option to set a single computer on your network outside of the router. If you have a computer that cannot run Internet applications successfully from behind the router, then you can place the computer into the DMZ for unrestricted Internet access.

**Note:** Putting a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

Enable DMZ Host :

DMZ IP Address : 0.0.0.0 << Computer Name

**VPN PASSTHROUGH :**

Enable PPTP Passthrough :

Enable L2TP Passthrough :

Enable IPSec Passthrough :

**Helpful Hints..**

**DMZ:** Only enable the DMZ option as a last resort. If you are having trouble using an application from a computer behind the router, first try opening ports associated with the application in the Virtual Server or Port Forwarding sections.

**VPN Passthrough:** Make sure VPN passthrough is enabled if you are trying to use a VPN client from behind the router.

**Support:** VPN Passthrough will only function if the VPN client being used runs on the standards ports associated with the VPN connection type. If you are having problems getting your VPN client connected from behind the router and these VPN passthrough options are enabled, please contact your network administrator to find out if any nonstandard ports or options are being used.



# Advanced Wireless Settings

**TX Rate:** Select the basic transfer rates based on the speed of wireless adapters on your wireless network. It is strongly recommended to keep this setting to **Auto**.

**Transmit Power:** Set the transmit power of the antennas.

**Beacon Interval:** Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

**RTS Threshold:** This value should remain at its default setting of 2346. If inconsistent data flow is a problem, only a minor modification should be made.

**Fragmentation:** The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

**DTIM Interval:** (Delivery Traffic Indication Message) 3 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**Preamble Type:** Select Short or Long Preamble. The Preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) for communication between the wireless router and the roaming wireless network adapters. Auto is the default setting. Note: High network traffic areas should use the shorter preamble type.

**CTS Mode:** CTS (Clear To Send) is a function used to minimize collisions among wireless devices on a wireless local area network (LAN). CTS will make sure the wireless network is clear before a wireless client attempts to send wireless data. Enabling CTS will add overhead and may lower wireless through put. **None:** CTS is typically used in a pure 802.11g environment. If CTS is set to "None" in a mixed mode environment populated by 802.11b clients, wireless collisions may occur frequently. **Always:** CTS will always be used to make sure the wireless LAN is clear before sending data. **Auto:** CTS will monitor the wireless network and automatically decide whether to implement CTS based on the amount of traffic and collisions that occurs on the wireless network.

**WMM Function:** WMM is QoS for your wireless network. Enable this option to improve the quality of video and voice applications for your wireless clients.

The screenshot shows the D-Link DIR-301 Advanced Wireless Settings page. The page is divided into several sections:

- Header:** D-Link logo and navigation tabs: SETUP, ADVANCED, TOOLS, STATUS, SUPPORT.
- Left Sidebar:** A list of configuration categories: PORT FORWARDING, APPLICATION RULES, NETWORK FILTER, WEBSITE FILTER, FIREWALL SETTINGS, ADVANCED WIRELESS (selected), and ADVANCED NETWORK.
- Main Content Area:**
  - ADVANCED WIRELESS SETTINGS :** A warning message: "If you are not familiar with these Advanced Wireless settings, please read the help section before attempting to modify these settings." Below the message are "Save Settings" and "Don't Save Settings" buttons.
  - ADVANCED WIRELESS SETTINGS :** A list of configuration options:
    - TX Rates: Auto (dropdown)
    - Transmit Power: 100% (dropdown)
    - Beacon interval: 100 (input field) (msec, range:20~1000, default:100)
    - RTS Threshold: 2346 (input field) (range: 256~2346, default:2346)
    - Fragmentation: 2346 (input field) (range: 1500~2346, default:2346, even number only)
    - DTIM interval: 1 (input field) (range: 1~255, default:1)
    - Preamble Type:  Short Preamble  Long Preamble
    - CTS Mode:  None  Always  Auto
    - WMM Function:  Disable  Enable
- Right Sidebar:** Helpful Hints.. **Advanced Wireless:** It is recommended that you leave these options at their default values. Adjusting them could negatively impact the performance of your wireless network.

# Advanced Network Settings

**UPnP Settings:** To use the Universal Plug and Play (UPnP™) feature click on **Enabled**. UPnP provides compatibility with networking equipment, software and peripherals.

**WAN Ping:** Unchecking the box will not allow the WBR-2310 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the WAN port to be “pinged”.

**WAN select to 10/100 Mbps:** You may set the port speed of the WAN port to 10Mbps, 100Mbps, or auto. Some older cable or DSL modems may require you to set the port speed to 10Mbps.

**Gaming Mode:** Gaming mode allows a form of pass-through for certain Internet Games. If you are using Xbox, Playstation2 or a PC, make sure you are using the latest firmware and Gaming Mode is enabled. To utilize Gaming Mode, click the box. If you are not using a Gaming application, it is recommended that you Disable Gaming Mode.

**Multicast streams:** Check the box to allow multicast traffic to pass through the router from the Internet.

**D-Link**

DIR-301 // SETUP ADVANCED TOOLS STATUS SUPPORT

**NETWORK SETTINGS :**  
If you are not familiar with these Advanced Network settings, please read the help section before attempting to enable or disable them.  
Save Settings Don't Save Settings

**UPNP :**  
Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices.  
Enable UPnP :

**WAN PING :**  
If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address.  
Enable WAN Ping Respond :

**WAN PORT SPEED :**  
10/100Mbps Auto

**GAMING MODE :**  
If you are having difficulties playing some online games - please enable this mode.  
Enable GAMING mode :

**Helpful Hints..**  
**WAN Ping Respond:** For added security, it is recommended that you disable the **WAN Ping Respond** option. Ping is often used by malicious Internet users to locate active networks or PCs.  
**Gaming Mode:** Gaming Mode should be used when you are playing games on the Internet from behind the router.  
**Multicast Streams:** If you are having trouble receiving multicast streams from the Internet, make sure the Multicast Stream option is enabled.

# Administrator Settings

This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes. Only the admin account has the ability to change both admin and user account passwords.

**Administrator Login Name:** Enter a new Login Name for the Administrator account.

**Administrator Password:** Enter a new password for the Administrator Login Name. The administrator can make changes to the settings.

**User Login Name:** Enter a new Login Name for the user account.

**User Password:** Enter the new password for the User login. If you login as the User, you can only see the settings, but cannot change them.

**Remote Management:** Remote management allows the WBR-1310 to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

**IP Address:** The Internet IP address of the computer that has access to the Broadband Router. If you input an asterisk (\*) into this field, then any computer will be able to access the Router. Putting an asterisk (\*) into this field would present a security risk and is not recommended.

**Port:** The port number used to access the WBR-1310.

Example: http://x.x.x.x:8080 whereas x.x.x.x is the WAN IP address of the WBR-1310 and 8080 is the port used for the Web-Management interface.

**D-Link**

DIR-301 //

SETUP ADVANCED TOOLS STATUS SUPPORT

ADMIN

TIME

SYSTEM

FIRMWARE

SYSTEM CHECK

**ADMINISTRATOR SETTINGS :**

There are two accounts that can access the router's management interface. These accounts are **admin** and **user**.

**Admin** has read/write access while **user** has read-only access. **User** can only view the settings but cannot make any changes. Only the **admin** account has the ability to change both **admin** and **user** account passwords.

Save Settings Don't Save Settings

**ADMINISTRATOR (THE DEFAULT LOGIN NAME IS "ADMIN") :**

Login name :

New Password :

Confirm Password :

**USER (THE DEFAULT LOGIN NAME IS "USER") :**

Login name :

New Password :

Confirm Password :

**REMOTE MANAGEMENT :**

Enable Remote Management :

IP Address :

Port :

**Helpful Hints..**

**Passwords:**  
For security reasons, it is recommended that you change the Login Name and Password for the Administrator and User accounts. Be sure to write down the new Login Names and Passwords to avoid having to reset the router in the event that they are forgotten.

**Remote Management:**  
When enabling Remote Management, you can specify the IP address of the computer on the Internet that you want to have access to your router, or you can enter an asterisk (\*) to allow access to any computer on the Internet.

# Time Settings

**Time Zone:** Select the Time Zone from the drop-down menu.

**Daylight Saving:** To select Daylight Saving time manually, select enabled or disabled, and enter a start date and an end date for daylight saving time.

**Automatic:** NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. This field is optional.

**Manual:** To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. Click Set Time. You can also click Copy Your Computer's Time Settings.

**D-Link**

DIR-301 // SETUP ADVANCED TOOLS STATUS SUPPORT

ADMIN  
TIME  
SYSTEM  
FIRMWARE  
SYSTEM CHECK

**TIME :**  
**Time Configuration**

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to adjust the time when needed.

Save Settings Don't Save Settings

**TIME CONFIGURATION :**

Time : **Apr/01/2002 01:41:32**  
Time Zone : (GMT-08:00) Pacific Time (US & Canada)

Enable Daylight Saving :

	Month	Week	Day of Week	Time
DST Start	Jan	1st	Sun	12 am
DST End	Jan	1st	Sun	12 am

**AUTOMATIC TIME CONFIGURATION :**

Enable NTP server :

Interval : 1 hrs

NTP Server Used :  << Select NTP Server

**SET THE DATE AND TIME MANUALLY :**

Current Gateway Time :

Year	2002	Month	Apr	Day	01	
Hour	01	Minute	41	Second	32	AM

Copy Your Computer's Time Settings

**Helpful Hints..**  
**Time Settings:**  
If you plan on using the scheduling feature of this router, then making sure the time is correct is extremely important. Either enter the time manually by clicking the **Copy Your Computers Time Settings** button, or use the **Automatic Time Configuration** option to have your router synchronize with a time server on the Internet.

# System Settings

**Save Settings to Local Hard Drive:** Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the Save button. You will then see a file dialog, where you can select a location and file name for the settings.

**Load Settings from Local Hard Drive:** Use this option to load previously saved router configuration settings. First, use the Browse control to find a previously save file of configuration settings. Then, click the Load button to transfer those settings to the router.

**Restore to Factory Default Settings:** This option will restore all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, use the Save button above.

**JumpStart function:** Click Enabled to use the JumpStart function. If your wireless router uses JumpStart, please check the adapter for instructions.

**Reset JumpStart:** Use this option to reset the JumpStart feature.

The screenshot displays the D-Link DIR-301 web interface. At the top, the D-Link logo is visible. Below it, a navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists menu items: ADMIN, TIME, SYSTEM, FIRMWARE, and SYSTEM CHECK. The main content area is titled 'SYSTEM SETTINGS' and contains the following text and controls:

**SYSTEM SETTINGS :**  
The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file created by device can be uploaded into the unit.

**SYSTEM SETTINGS :**

- Save Settings To Local Hard Drive :
- Load Settings From Local Hard Drive :
- Restore To Factory Default Settings :
- Reboots the DIR-301 :

**Helpful Hints..**  
**Saving System Settings:**  
Once your router is configured they way you want it, you can save these settings to a configuration file that can later be loaded in the event that the router's default settings are restored. To do this, click the **Save** button next to where it says Save Settings to Local Hard Drive.

# Firmware Upgrade

You can upgrade the firmware of the Router here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support site for firmware updates at <http://support.dlink.com>. You can download firmware upgrades to your hard drive from the D-Link support site.

**Firmware Upgrade:** Click on the link in this screen to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

**Browse:** After you have downloaded the new firmware, click Browse in this window to locate the firmware update on your hard drive. Click **Save Settings** to complete the firmware upgrade.

**D-Link**

DIR-301 // SETUP ADVANCED **TOOLS** STATUS SUPPORT

ADMIN  
TIME  
SYSTEM  
FIRMWARE  
SYSTEM CHECK

**FIRMWARE UPGRADE :**

There may be new firmware for your DIR-301 to improve functionality and performance. [Click here to check for an upgrade on our support site.](#)

To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Save Settings button below to start the firmware upgrade.

**CURRENT FIRMWARE INFO :**

Current Firmware Version 1.00  
Firmware Date Nov 17, 2006

**Helpful Hints..**

**Firmware Updates:** Firmware updates are released periodically to improve the functionality of your router and also to add features. If you run into a problem with a specific feature of the router, check our support site by clicking on the [Click here to check for an upgrade on our support site](#) link and see if an updated firmware is available for your router.

# System Check

**Virtual Cable Tester (VCT) Info:** VCT is an advanced feature that integrates a LAN cable tester on every Ethernet port on the router. Through the graphical user interface (GUI), VCT can be used to remotely diagnose and report cable faults such as opens, shorts, swaps, and impedance mismatch. This feature significantly reduces service calls and returns by allowing users to easily troubleshoot their cable connections.

**Ping Test:** The Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the IP Address that you wish to Ping, and click **Ping**.

**D-Link**

DIR-301 //

SETUP    ADVANCED    **TOOLS**    STATUS    SUPPORT

ADMIN  
TIME  
SYSTEM  
FIRMWARE  
SYSTEM CHECK

**FAST ETHERNET VIRTUAL CABLE TESTER (VCT) :**

Cable Test is an advanced feature that integrates a LAN cable tester on every Ethernet port on the router.

**VCT INFO :**

Ports	Link Status		
WAN		Disconnected	<a href="#">More Info</a>
LAN1		Disconnected	<a href="#">More Info</a>
LAN2		100Mbps FULL Duplex	<a href="#">More Info</a>
LAN3		Disconnected	<a href="#">More Info</a>
LAN4		Disconnected	<a href="#">More Info</a>

**PING TEST :**

Ping Test is used to send "Ping" packets to test if a computer is on the Internet.

Host Name or IP Address :  [Ping](#)

**PING RESULT:**

## Device Information

This page displays the current information for the DIR-301. It will display the LAN, WAN, and Wireless information.

If your WAN connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

If your WAN connection is set up for PPPoE, a **Connect** button and a **Disconnect** button will be displayed. Use **Disconnect** to drop the PPPoE connection and use **Connect** to establish the PPPoE connection.

**LAN:** Displays the MAC address and the private (local) IP settings for the router.

**WAN:** Displays the MAC address and the public IP settings for the router.

**Wireless JumpStart:** Displays whether or not the status of the JumpStart feature is enabled or disabled.

**Wireless:** Displays the wireless MAC address and your wireless settings such as SSID and Channel.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar contains links for DEVICE INFO, LOG, STATS, and WIRELESS. The main content area is titled "DEVICE INFORMATION" and contains the following details:

**DEVICE INFORMATION :**  
All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.  
**Firmware Version: 1.00 , Nov 17, 2006**

**LAN :**  
MAC Address : 00-17-9a-4d-8c-e5  
IP Address : 192.168.0.1  
Subnet Mask : 255.255.255.0  
DHCP Server : Enabled

**WAN:**  
MAC Address : 00-17-9a-4d-8c-e6  
Connection : DHCP Client Disconnected  
   
IP Address : 0.0.0.0  
Subnet Mask : 0.0.0.0  
Default Gateway : 0.0.0.0  
DNS :

**WIRELESS 802.11G :**  
SSID : dlink  
Channel : 13  
Encryption : Disabled



# Log

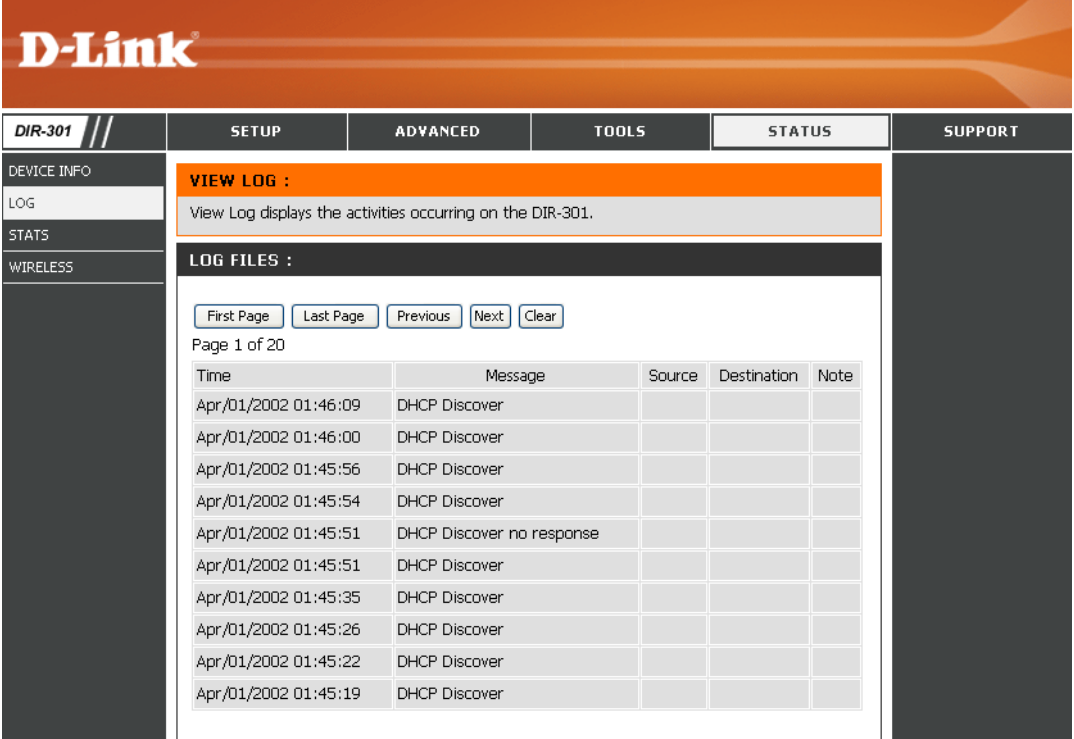
**First Page:** View the first page of the log.

**Last Page:** View the last page of the log.

**Previous:** View the previous page.

**Next:** View the next page.

**Clear:** Clear the log.



**D-Link**

DIR-301 //

SETUP    ADVANCED    TOOLS    STATUS    SUPPORT

DEVICE INFO

LOG

STATS

WIRELESS

**VIEW LOG :**

View Log displays the activities occurring on the DIR-301.

**LOG FILES :**

Page 1 of 20

Time	Message	Source	Destination	Note
Apr/01/2002 01:46:09	DHCP Discover			
Apr/01/2002 01:46:00	DHCP Discover			
Apr/01/2002 01:45:56	DHCP Discover			
Apr/01/2002 01:45:54	DHCP Discover			
Apr/01/2002 01:45:51	DHCP Discover no response			
Apr/01/2002 01:45:51	DHCP Discover			
Apr/01/2002 01:45:35	DHCP Discover			
Apr/01/2002 01:45:26	DHCP Discover			
Apr/01/2002 01:45:22	DHCP Discover			
Apr/01/2002 01:45:19	DHCP Discover			

## Stats

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the WBR-2310 on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301 //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists 'DEVICE INFO', 'LOG', 'STATS', and 'WIRELESS'. The main content area is titled 'TRAFFIC STATISTICS :'. Below the title, it states: 'Traffic Statistics display Receive and Transmit packets passing through the DIR-301.' There are 'Refresh' and 'Reset' buttons. A table displays the following data:

	Receive	Transmit
WAN	0 Packets	943 Packets
LAN	21250 Packets	8216 Packets
WIRELESS 11g	0 Packets	4575 Packets

## Wireless Stats

The wireless client table displays a list of current connected wireless clients. This table also displays the connection time and MAC address of the connected wireless client.

The screenshot shows the D-Link DIR-301 web interface. The top navigation bar includes 'DIR-301 //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists 'DEVICE INFO', 'LOG', 'STATS', and 'WIRELESS'. The main content area is titled 'CONNECTED WIRELESS CLIENT LIST :'. Below the title, it states: 'The Wireless Client table below displays Wireless clients Connected to the AP (Access Point), to the AP (Access Point).' A table header is visible with the following columns:

Connected Time	MAC Address	Mode
----------------	-------------	------

# Support

The screenshot displays the D-Link DIR-301 web interface. At the top, there is an orange header with the D-Link logo. Below the header is a navigation bar with tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The SUPPORT tab is selected. On the left side, there is a 'MENU' sidebar. The main content area is titled 'SUPPORT MENU' and contains a list of links organized into four categories: Setup, Advanced, Tools, and Status. Each category contains several sub-links.

DIR-301	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
MENU	<b>SUPPORT MENU</b> <ul style="list-style-type: none"><li><b>Setup</b><ul style="list-style-type: none"><li><a href="#">Internet</a></li><li><a href="#">Wireless Settings</a></li><li><a href="#">Network settings</a></li></ul></li><li><b>Advanced</b><ul style="list-style-type: none"><li><a href="#">Port Forwarding</a></li><li><a href="#">Application Rules</a></li><li><a href="#">Network Filter</a></li><li><a href="#">Website Filter</a></li><li><a href="#">Firewall Settings</a></li><li><a href="#">Advanced Wireless</a></li><li><a href="#">Advanced Network</a></li></ul></li><li><b>Tools</b><ul style="list-style-type: none"><li><a href="#">Admin</a></li><li><a href="#">Time</a></li><li><a href="#">System</a></li><li><a href="#">Firmware Upgrade</a></li><li><a href="#">System Check</a></li></ul></li><li><b>Status</b><ul style="list-style-type: none"><li><a href="#">Device Info</a></li><li><a href="#">Log</a></li><li><a href="#">Stats</a></li><li><a href="#">Wireless</a></li></ul></li></ul>				

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-301 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

## What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

# Configure WEP

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WEP Security**.
3. Next to *Authentication*, select **Shared Key**.
4. Select either **64-bit** or **128-bit** encryption from the drop-down menu next to *WEP Encryption*.
5. Next to *Key Type*, select either **Hex** or **ASCII**.  
Hex (recommended) - Letters A-F and numbers 0-9 are valid.  
ASCII - All numbers and letters are valid.
6. Next to *Key 1*, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.
7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.

**WIRELESS SECURITY MODE :**

Security Mode : Enable WEP Wireless Security (basic)

---

**WEP :**

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the router and the wireless stations. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP set the authentication type to "Shared Key" when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for 64 bit keys, and a maximum of 13 characters for 128 bit keys.

Authentication : Shared Key

WEP Encryption : 64Bit

Key Type : HEX

Default WEP Key : WEP Key 1

WEP Key 1 :

WEP Key 2 :

WEP Key 3 :

WEP Key 4 :

# What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

# Configure WPA-PSK

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.
3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.
4. Next to *PSK/EAP*, select **PSK**.
5. Next to *Passphrase*, enter a key (passphrase). The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.
6. Enter the passphrase again next to *Confirmed Passphrase*.
7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK (or WPA2-PSK) on your adapter and enter the same passphrase as you did on the router.

**WIRELESS SECURITY MODE :**

Security Mode :

**WPA-PERSONAL :**

WPA-Personal requires stations to use high grade encryption and authentication.

Cipher Type :

PSK / EAP :

Passphrase :

Confirmed Passphrase :

# Configure WPA (RADIUS)

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.
3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.
4. Next to *PSK/EAP*, select **EAP**.
5. Next to *RADIUS Server 1* enter the IP Address of your RADIUS server.
6. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
7. Next to *Shared Secret*, enter the security key.
8. If you have a secondary RADIUS server, enter its IP address, port, and secret key.
9. Click **Apply Settings** to save your settings.

**WIRELESS SECURITY MODE :**

Security Mode : Enable WPA-Personal Wireless Security (enhanced) ▾

---

**WPA-PERSONAL :**

WPA-Personal requires stations to use high grade encryption and authentication.

Cipher Type : AUTO ▾

PSK / EAP : EAP ▾

802.1X

RADIUS Server 1 : IP	<input style="width: 90%;" type="text" value="0.0.0.0"/>
Port	<input style="width: 90%;" type="text" value="1812"/>
Shared Secret	<input style="width: 90%;" type="text"/>
RADIUS Server 2 : IP	<input style="width: 90%;" type="text" value="0.0.0.0"/>
Port	<input style="width: 90%;" type="text" value="0"/>
Shared Secret	<input style="width: 90%;" type="text"/>



# Connect to a Wireless Network Using Windows® XP

Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

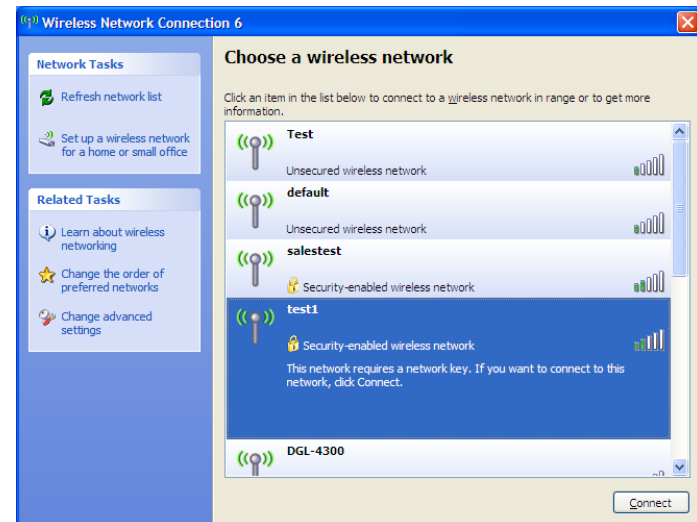
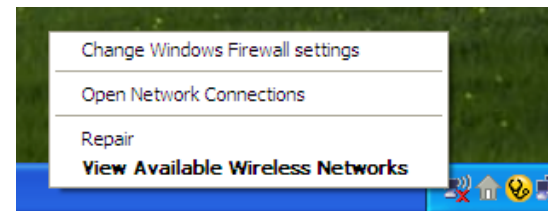
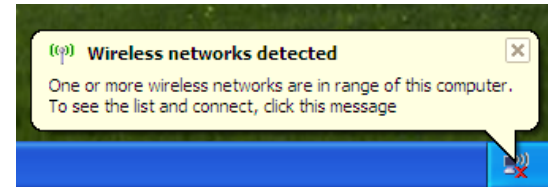
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

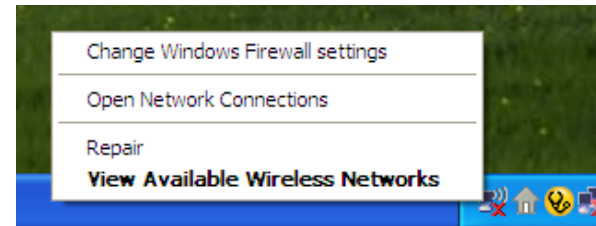
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



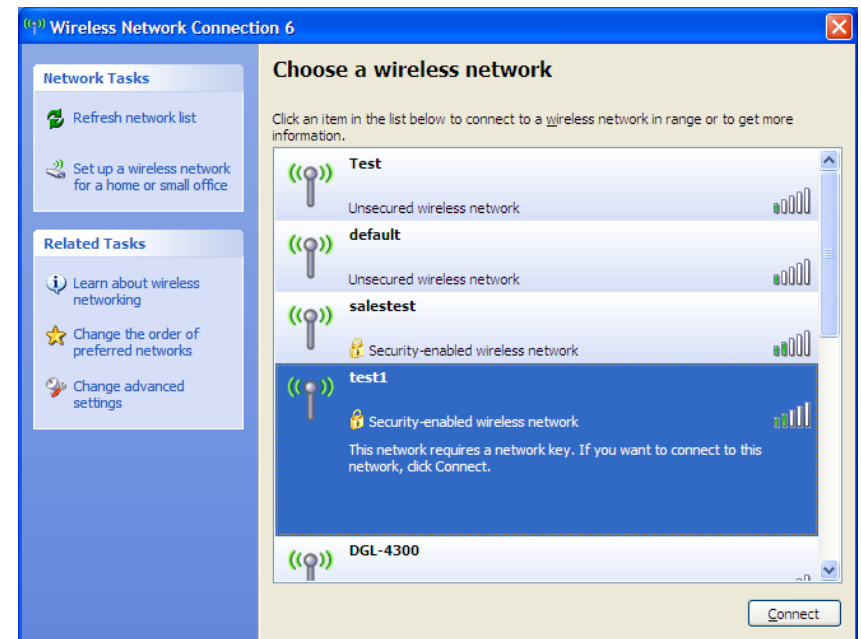
# Configure WEP

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

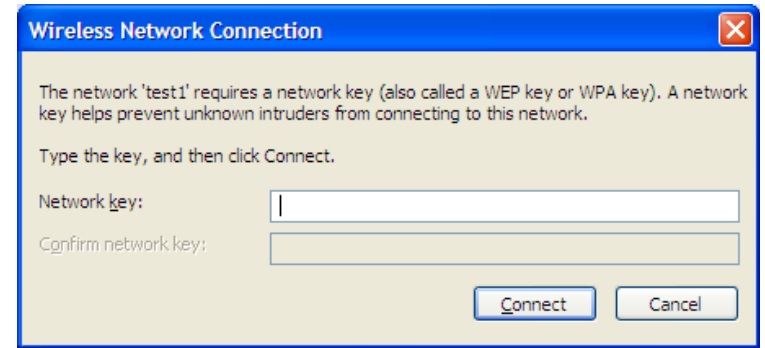


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



**3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your router and click **Connect**.**

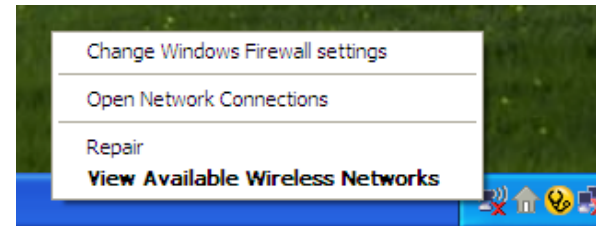
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless router.



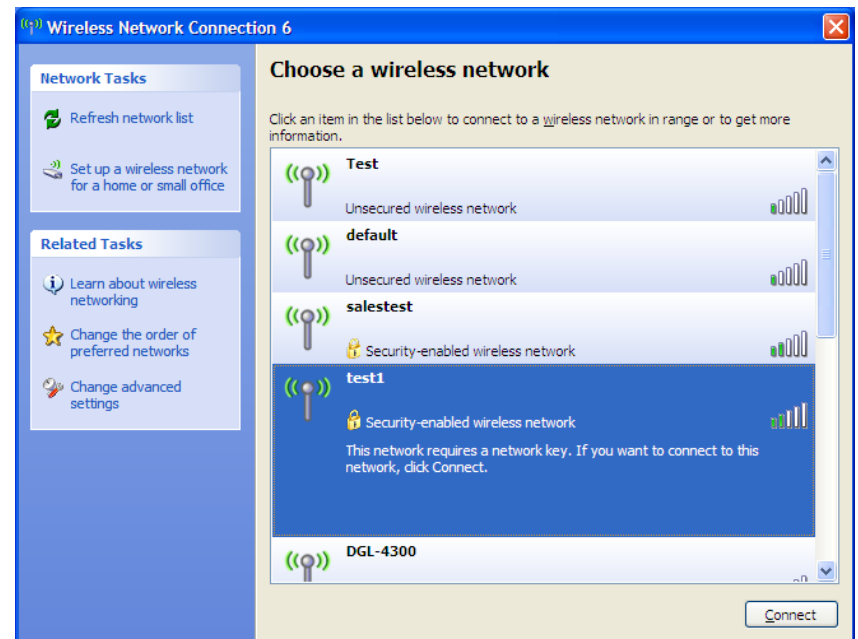
# Configure WPA-PSK

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

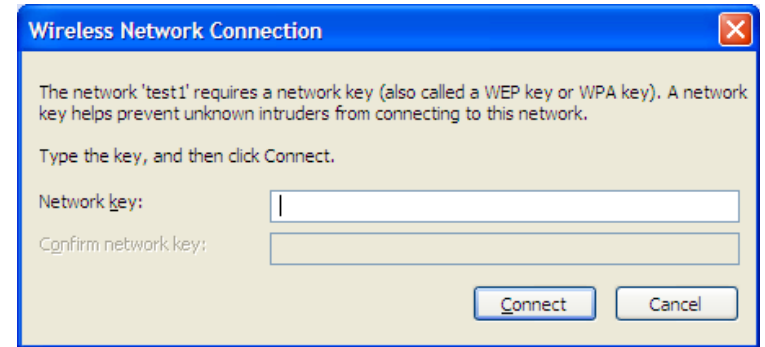


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless router.



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the WBR-1310. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

## 1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (192.168.0.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 6.0 or higher
  - Firefox 1.5 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:
  - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.
  - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
  - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
  - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your the web management.
- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

## 2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.0.1. When logging in, the username is **admin** and leave the password box empty.

### 3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

**Note: AOL DSL+ users must use MTU of 1400.**

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in **command** (Windows® NT, 2000, and XP users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

**ping [url] [-f] [-l] [MTU value]**

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping yahoo.com -f -l 1472
Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:
Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 93ms, Maximum = 203ms, Average = 132ms

C:\>
```



You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with ( $1452+28=1480$ ).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure**.
- To change the MTU enter the number in the MTU field and click the **Save Settings** button to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

## **What is Wireless?**

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

## **Why D-Link Wireless?**

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

## **How does wireless work?**

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

### **Wireless Local Area Network (WLAN)**

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

## **Wireless Personal Area Network (WPAN)**

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

## **Who uses wireless?**

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

### **Home**

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

### **Small Office and Home Office**

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

## **Where is wireless used?**

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

## **Tips**

Here are a few things to keep in mind, when you install a wireless network.

### **Centralize your router or Access Point**

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

### **Eliminate Interference**

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

## Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more WNA-2330 wireless network Cardbus adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

# Networking Basics

## Check your IP address

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

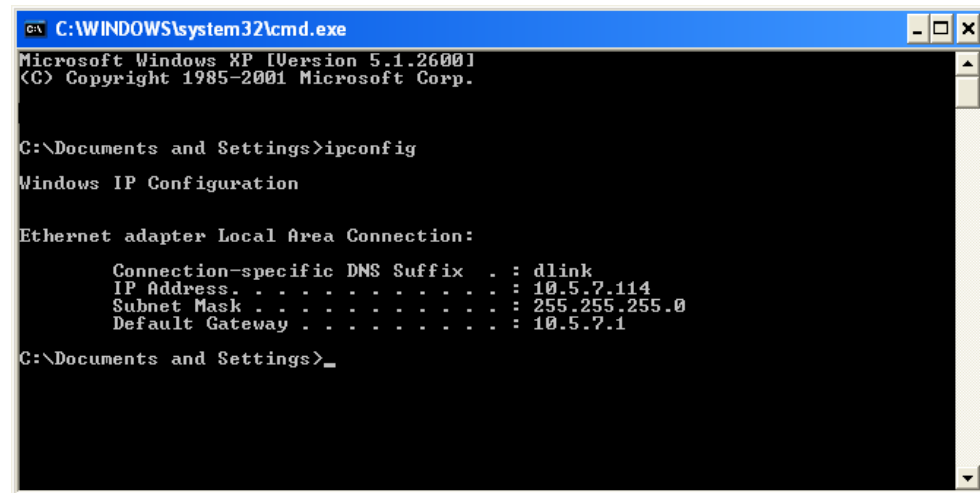
Click on **Start > Run**. In the run box type **cmd** and click **OK**.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and Settings>_
```

## Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

### Step 1

Windows® XP - Click on **Start > Control Panel > Network Connections**.

Windows® 2000 - From the desktop, right-click **My Network Places > Properties**.

### Step 2

Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

### Step 3

Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

### Step 4

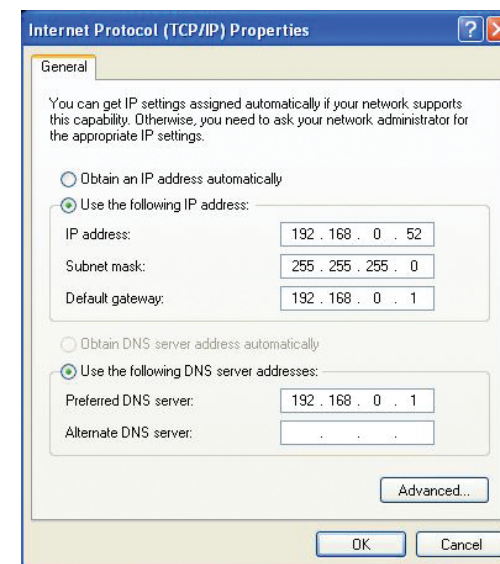
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

### Step 5

Click OK twice to save your settings.





# Technical Specifications

## Standards

- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

## Wireless Signal Rates\*

- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 1Mbps

## Security

- WPA - Wi-Fi Protected Access (TKIP, MIC, IV Expansion, Shared Key Authentication)
- 802.1x
- 64/128-bit WEP

## Modulation Technology

Orthogonal Frequency Division Multiplexing (OFDM)

## Receiver Sensitivity

- 54Mbps OFDM, 10% PER,-68dBm)
- 48Mbps OFDM, 10% PER,-68dBm)
- 36Mbps OFDM, 10% PER,-75dBm)
- 24Mbps OFDM, 10% PER,-79dBm)
- 18Mbps OFDM, 10% PER,-82dBm)
- 12Mbps OFDM, 10% PER,-84dBm)

- 11Mbps CCK, 8% PER,-82dBm)
- 9Mbps OFDM, 10% PER,-87dBm)
- 6Mbps OFDM, 10% PER,-88dBm)
- 5.5Mbps CCK, 8% PER,-85dBm)
- 2Mbps QPSK, 8% PER,-86dBm)
- 1Mbps BPSK, 8% PER,-89dBm)

## VPN Pass Through/ Multi-Sessions

- PPTP
- L2TP
- IPSec

## Device Management

- Web-based Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java-enabled browsers
- DHCP Server and Client

## Wireless Frequency Range

2.4GHz to 2.462GHz

## Wireless Operating Range<sup>2</sup>

- Indoors - up to 328 ft. (100 meters)
- Outdoors- up to 1312 ft. (400 meters)

## Wireless Transmit Power

15dBm ± 2dBm

## External Antenna Type

Single detachable reverse SMA

### Advanced Firewall Features

- NAT with VPN Pass-through (Network Address Translation)
- MAC Filtering
- IP Filtering
- URL Filtering
- Domain Blocking
- Scheduling

**Weight**  
0.246kg

### Operating Temperature

32°F to 131°F ( 0°C to 55°C)

### Humidity

95% maximum (non-condensing)

### Safety and Emissions

CE

### LEDs

- Power
- Status
- Internet
- WLAN (Wireless Connection)
- LAN (10/100)

### Dimensions

- L = 112.6mm
- W = 147.5mm
- H = 31.8mm

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

# Contacting Technical Support

You can find software updates and user documentation on the D-Link websites.

If you require product support, we encourage you to browse our FAQ section on the Web Site before contacting the Support line. We have many FAQ's which we hope will provide you a speedy resolution for your problem.

## **For Customers within The United Kingdom & Ireland:**

### ***D-Link UK & Ireland Technical Support over the Internet:***

<http://www.dlink.co.uk>

<ftp://ftp.dlink.co.uk>

### ***D-Link UK & Ireland Technical Support over the Telephone:***

08456 12 0003 (United Kingdom)

+1890 886 899 (Ireland)

Lines Open

8.00am-10.00pm Mon-Fri

10.00am-7.00pm Sat & Sun

## **For Customers within Canada:**

### **D-Link Canada Technical Support over the Telephone:**

1-800-361-5265 (Canada)

Mon. to Fri. 7:30AM to 9:00PM EST

### **D-Link Canada Technical Support over the Internet:**

<http://support.dlink.ca>

email: [support@dlink.ca](mailto:support@dlink.ca)